



Desktop Metal (NYSE: DM) is accelerating the transformation of manufacturing with an expansive portfolio of metal 3D printing solutions, from rapid prototyping to mass production. Founded in 2015 by leaders in advanced manufacturing, metallurgy, and robotics, the company is addressing the unmet challenges of speed, cost, and quality to make additive manufacturing an essential tool for engineers and manufacturers around the world. Desktop Metal was selected as one of the world's 30 most promising Technology Pioneers by the World Economic Forum and named to MIT Technology Review's list of 50 Smartest Companies.

### **Manufacturing Landscape Today**

- Additive manufacturing (AM), commonly referred to as 3D printing, has the capacity to change the way parts of nearly all materials are designed, manufactured and sold around the world, and provides businesses the means to make high-performance products faster, more sustainably, and at costs and volumes competitive with conventional manufacturing processes.
- Additive Manufacturing 2.0 (AM 2.0) is the next revolution in manufacturing that addresses the major limitations of conventional manufacturing methods. Enabling easy-to-use, economic solutions for mass production, AM 2.0 is a wave of next-generation additive technologies that is reshaping the future of mass manufacturing by unlocking throughput, repeatability and competitive part costs. Innovations in printer, material and software will drive adoption of AM 2.0 and pull it into direct competition with conventional processes to capture its piece of the \$12 trillion annual manufacturing goods market, according to estimates from A.T. Kearney.

### **Desktop Metal Inception, Mission & Innovations**

Desktop Metal was founded in 2015 by a team of visionary technologists and proven leaders with experience bringing emerging technologies to market across the hardware, materials and software sectors. The company's mission is to make AM accessible to all engineers, designers and manufacturers. In doing so, it will empower businesses to adopt radical, new approaches to design and production and enable the success of many of the high-growth industries that will drive global economic growth in the years to come.

The founding team includes:

- Ric Fulop, Chairman and CEO
- Jonah Myerberg, Chief Technology Officer
- Emanuel "Ely" Sachs, MIT professor and early pioneer of 3D printing, inventor of binder jet printing
- A. John Hart, mechanical engineer and MIT professor who leads the mechanosynthesis lab
- Yet-Ming Chiang, MIT professor and one of the world's top materials scientists
- Christopher Schuh, Chairman of the MIT Dept. of Materials Science & Engineering, and one of the world's leading metallurgists

Since its inception, Desktop Metal has developed proprietary technologies across hardware, software and materials science to accelerate widespread adoption of AM. These innovative technologies serve as the foundation of the company's AM solutions and include:

- **Single Pass Jetting™ (SPJ).** A powder metallurgy-based process in which all the sequential steps of conventional binder jetting are combined and applied with each pass of a single print carriage, leading to significant increases in printer throughput and improvements in part costs.
- **Bound Metal Deposition™ (BMD).** A powder metallurgy-based process in which loose powders and dangerous lasers commonly associated with 3D printing are eliminated in favor of bound metal rods to shape parts layer-by-layer, leading to reductions in requirements for special facilities.
- **Micro Automated Fiber Placement™ (Micro AFP).** A process in which tape pre-impregnated with continuous fiber ("continuous fiber prepreg tape") is deposited along a part's critical load paths in combination with chopped fiber filament to build high-strength and high-resolution parts with aerospace- and industrial-grade materials.

## A Portfolio of 3D Printing Solutions

Desktop Metal solutions span use cases across the product life cycle, from product development to mass production and aftermarket operations, and address an array of industries, including automotive, aerospace, healthcare, consumer products, heavy industry, machine design and research and development. These 3D printing technologies seek to change the rules of traditional manufacturing solutions with first-of-its-kind innovative approaches that reduce costs and significantly increase speed, safety, and print quality:

- **Production System™ P-50** is an industrial metal manufacturing solution designed to achieve speeds up to 100 times those of legacy powder bed fusion additive manufacturing technologies, enabling production quantities of up to millions of parts per year at costs competitive with conventional mass production techniques. Production System P-50 is scheduled to begin volume commercial shipments in 2021. **Production System P-1** serves as a bridge from process development to full-scale mass production of end-use parts, leveraging the same patent-pending SPJ technology and print carriage design as the P-50.
- **Shop System™** brings metal AM to machine and job shops with an affordable, turnkey solution that achieves exceptional surface finish parts with rich feature detail at speeds up to 10 times those of legacy powder bed fusion additive manufacturing technologies. Shop System began volume commercial shipments in late 2020.
- **Studio System™** is an office-friendly metal AM system that minimizes requirements for special facilities or expensive environmental, health, and safety equipment as compared to legacy powder bed fusion AM technologies. It simplifies the low-volume production of complex, high-quality metal parts in-house through an integrated software workflow. Studio System has been shipping in volume since the fourth quarter of 2018.
- **Fiber™** is a desktop 3D printer designed to produce composite parts reinforced with aerospace- and industrial-grade continuous fiber tape, unlocking superior part strength with high-performance materials starting at an affordable annual subscription price.

## Metal 3D Printing Software Solutions

- **Fabricate™** - Desktop Metal's 3D printing software streamlines the process of setting up prints and provides a cohesive, modern user interface and experience across the product portfolio. Fabricate orients parts for success throughout printing, debinding, and sintering—applying expert metallurgy to automate the entire process. The software natively reads commonly used 3D CAD file formats as well as traditional 3D printing file formats, such as STLs.
- **Live Parts™** is the first and only growth-based design software for 3D printing. The software enables users to “grow” functional, 3D printable parts with complex, efficient geometries designed from “seed cells” that grow in real time on screen as living organisms in one continuous process. Live Parts produces emergent behavior with its growth processes, creating shapes based on relationships of cells with one another. This approach allows the designer to essentially let the design produce itself, resulting in lighter and stronger parts.
- **Live Sinter™** is a proprietary sintering process simulation software designed to improve part accuracy, reduce sintering support structures and eliminate the trial and error required to achieve high-accuracy parts via powder metallurgy-based AM processes. It predicts the shrinkage and distortion parts undergo during sintering, and automatically compensates for such changes, creating “negative offset” geometries that, once printed, will sinter to original, intended design specifications. Live Sinter can be calibrated to a variety of alloys.

### Company Facts

Founded: October 2015

Employees: 200+

Funding: \$438 million to-date

- Koch Disruptive Technologies (KDT), GV (formerly Google Ventures), GE, BMW, Ford Motor Company, NEA, Kleiner Perkins, Lux Capital

Public Listing: NYSE: DM

Patents: More than 100 patents in process covering over 200 inventions

Website: [www.desktopmetal.com](http://www.desktopmetal.com)

### Company Recognition

- World's 30 Most Promising Technology Pioneers, World Economic Forum
- Gold Innovation Award, Edison Awards
- 50 Smartest Companies, MIT Technology Review
- Best of What's New in Engineering, Popular Science
- Top Builders & Innovators, Goldman Sachs

### Location

Desktop Metal 63 Third Ave. Burlington, MA 01803

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